REMARKS

Claims 3-6 are pending in this application. By this Amendment, claims 3-6 are amended. The amendments to the claims introduce no new matter because they serve only to better clarify the subject matter recited in the claims. The amendments do not narrow the scope of the claims. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed below; (b) do not raise any new issue requiring further search and/or consideration as the amendments amplify issues previously discussed throughout prosecution; and (c) place the application in better form for Appeal, should an Appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the Final Rejection, and in multiple telephone interviews with the Examiner. Entry of the amendments is thus respectfully requested.

Applicant appreciates the courtesies shown to Applicant's representative by Examiner Aggarwal in the August 11, 2005 telephone interviews. Applicant's separate record of the substance of the interview is incorporated into the following remarks. Specifically, claims 3-6 are amended to comply with the Examiner's helpful suggestions made during the interviews.

The Office Action, in paragraph 5, rejects claims 3-6 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,633,415 to Arafune et al. (hereinafter "Arafune") in view of U.S. Patent No. 5,917,620 to Hasegawa. This rejection is respectfully traversed.

A. The Arafune Device Does Not Read Pixel Data Of The Same Image Portion At Different Times From The Same Position

Arafune teaches an image input apparatus for reading an original image by moving an optical unit with a motor which is used to repeatedly read an original image (Abstract). The specific concern that Arafune seeks to overcome is deterioration in precision and, therefore, resolution, of images scanned a plurality of times based on mechanical clearance and/or play in the motor drive unit for the image scanning element (see, e.g., col. 1, lines 32-44). Arafune defines a variable P as equal to the pitch of a photoelectric conversion pixel (col. 4, lines 51-53). On a second-time scanning of an individual original document placed on the original-placing glass board 100 shown in at least Fig. 5A of Arafune, a glass plate 11 is slanted in such a way to cause the optical axis of an image forming lens 105 to offset by a factor of P/2 or half of the pixel pitch P (col. 5, lines 31-37). As such, with reference to Fig. 6 of Arafune, on subsequent scans "[t]he centers of these pixels shift from each other by P/2 both in the main scanning direction and the sub-scanning direction" (col. 6, lines 1-3). Thus, as shown in at least Figs. 6 and 7 of Arafune, subsequent scans do not read pixel data at different times from the same position.

Claims 3-6 each recite, among other features, averaging and/or adding a plurality of pixel data sets which are stored in a pixel data storage device, the plurality of pixel data sets representing pixel data of the same image portion having been read at different times from the same position with reference to a direction in which image pickup elements of the respective image pickup element rows are arranged. Applicant respectfully submits that Arafune cannot reasonably be considered to teach, or to have suggested, an adding and/or averaging operation carried out on pixel data having been read at different times from the same position.

B. The Office Action's Rebuttal Regarding The "Different Times/Same Position" Feature Is Inadequate

Applicant previously asserted the above argument regarding the applicability of Arafune in an Amendment filed on March 3, 2005. This Office Action, in paragraph 2, indicates that the Examiner does not agree with Applicant's argument in this regard. Specifically, the Office Action states that Arafune teaches in col. 6, lines 24-30, that Fig. 7 discloses a full line that represents the position of pixel data obtained by the first-time scanning, and a dotted line that represents the position of pixel data obtained from the second-time scanning. However, despite the conclusion to the contrary in the Office Action, Fig. 7, in fact, shows that on subsequent scans Arafune does not read pixel data from the same position.

If Fig. 7 showed reading of pixel data from the same position at different times, as asserted by the Office Action, then there would be no need to differentiate between the full line and the dotted line representations of Arafune in Fig. 7. Because Fig. 7 makes this differentiation, it is clear that different pixel data is read by Arafune at different times.

The Office Action asserts that its interpretation of the disclosure of Arafune is more clearly shown in Fig. 9 as a plurality of pixel data sets represented as a pixel train obtained by first-time scanning, and other data sets represented as a pixel train obtained by second-time scanning. The Office Action attempts to equate pixel data D1(x,y) with D2(x,y). With reference to Fig. 7, it is clear that this data represents pixel data at different times from different positions, not from the same position as is recited, among other features, in the pending claims.

To the extent that Fig. 9 is relied upon at all, it should be noted that Fig. 9 is indicated as illustrating "a signal waveform chart showing signals of various parts shown in the circuit block diagram of Fig. 8" (col. 2, lines 30-31). The description of what is illustrated in Fig. 9

indicates that these pixel data trains are output respectively from page memories with some delays being introduced (see, e.g., col. 7, lines 6-37). If, as the Office Action asserts, the pixel data which is added and/or averaged represented pixel data read at different times from the same position, D1(x,y) and D2(x,y) would be depicted as coincident in Fig. 7, and/or data regarding the pixel image retrieved from page memories, as shown in Fig. 9, would, at varying timing, show a data element representing D1(x,y) more than once in the depicted data signal streams.

Failing this, Arafune cannot reasonably be considered, particularly in light of the positive depiction and description in Fig. 7, to teach or even to have suggested the above-quoted feature. In fact, Arafune, teaches that on subsequent scans the glass plate is moved from a position perpendicular to the optical axis, as shown in Fig. 5B to a slanted position as shown in Fig. 5C "to cause the optical axis to shift as one-half of the pixel pitch" (col. 5, lines 29-36). As such, Arafune teaches that the respective positions of optical images of line-sequential signals formed on the CCD 106 by the scanning performed two times are made to shift from each other to an extent which approximately corresponds to one-half of the pitch P between pixels of the CCD 106" (col. 5, lines 43-47).

There is no reasonable construction by which the disclosure of Arafune, based on all the information provided above, can reasonably be considered to teach, or even to have suggested, a plurality of pixel data sets representing pixel data of the same image portion having been read at different times from the same position. In fact, a reasonable reading of Arafune, based on the quoted language, is that Arafune specifically teaches away from such a feature, and insists that pixel data sets representing pixel data of the same image portion must be read at different times from different positions.

C. The Office Action Fails To Show Motivation For The Proposed Modification

To the extent that Hasegawa may be combinable with Arafune, a conclusion that the Applicant does not concede for the reasons set forth below, Hasegawa does not overcome the above shortfall in the application of Arafune to the subject matter recited in claims 3-6.

Applicant previously argued that, despite the assertion to the contrary in the Office Action, there is nothing to suggest that one of ordinary skill in the art would have been motivated to combine the teachings of Arafune and Hasegawa. Arafune seeks to overcome mechanically-induced distortion effects based on multiple scans of the single original by a single scanning element. Hasegawa is directed at increasing reading speed with an increased signal-to-noise ratio by using multiple rows of scanning elements. Attempting to combine the teachings of Arafune and Hasegawa in the manner suggested by the Office Action would likely have resulted in a much more complicated device as offsetting and averaging pixel data from multiple rows of mechanically moved sensors would likely prove much more difficult than attempting to optically move and average pixel data from a single row of sensors as is disclosed in Arafune. Such increased complexity would likely slow the scanning of any combined device rather than increase reading speed as is the objective of Hasegawa. The Office Action does not address this argument.

Additionally, the only response by the Examiner to Applicant's arguments regarding motivation to combine is to show where the respective elements are believed to be discussed in the prior art. The Office Action completely fails to discuss the motivation to combine these elements in the manner proposed.

* * *

Applicant's representative presented each of the above arguments to Examiner Aggarwal during the August 11 telephone interviews. The Examiner indicated that clarifying

the subject matter recited in the claims to recite that pixel data of the same image portion was being read at different times from the same position would, in the Examiner's opinion, better distinguish the subject matter of the claims from the combination of the applied references. This Amendment makes that change, as suggested.

For at least these reasons, Applicant respectfully submits that the combination of Arafune and Hasegawa cannot reasonably be considered to teach, or even to have suggested, the combinations of all of the features varyingly recited in claims 3-6.

Accordingly, reconsideration and withdrawal of the rejection of claims 3-6 under 35 U.S.C. §103(a) as being unpatentable over Arafune in view of Hasegawa are respectfully requested.

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 3-6 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,

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